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THE CORNELL COUNTRYMAN

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Beginning in this issue, "THE MAN ON THE LAND
ON THE OTHER SIDE OF THE WORLD"

By B. T. GALLOWAY

"AT THE EXPOSITION"

By B. H. CROCHERON

"GREETINGS TO NEW STUDENTS IN THE
COLLEGE OF AGRICULTURE"

By J. E. RICE

ARTICLES FOR WOMEN STUDENTS

By GERTRUDE S. MARTIN and CLARIBEL NYE

OCTOBER



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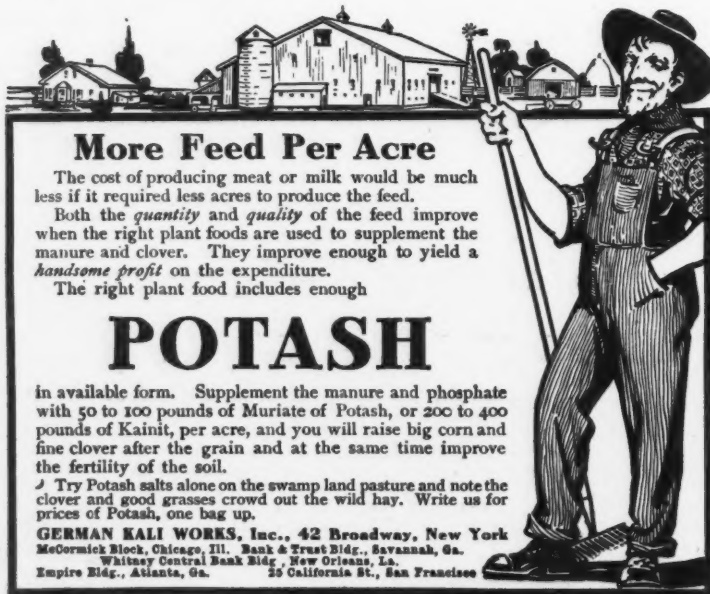
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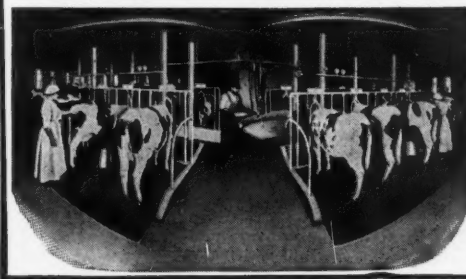
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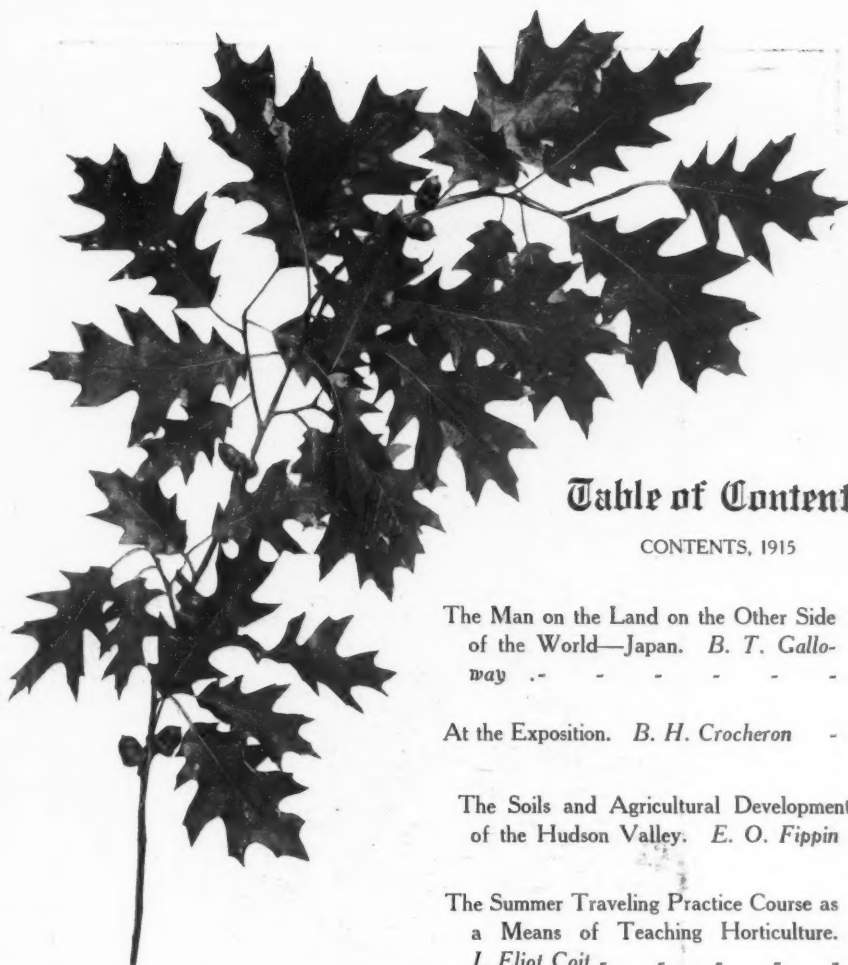


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"Never before has such a monument been reared to achievement as these concrete expressions that a nation has found itself—found itself in the welfare not of individuals but of communities."

(See "At the Exposition," page 21)

THE CORNELL COUNTRYMAN

Vol. XIII

ITHACA, N. Y., OCTOBER, 1915

No. 1

The Man on the Land on the Other Side of the World*

By Beverly T. Galloway

Dean, New York State College of Agriculture at Cornell University

JAPAN. THE LAND OF SMALL FARMS



HE very first glimpse of Japan is suggestive of that world old industry—farming. As the great ship feels her way into the

Harbor of Yokohama and the weather is misty or rainy, as it is likely to be, one has glimpses of what appear to be diminutive animated hay stacks, gliding and bobbing about on the landing place. Nearer view reveals that our hay stacks are little dock laborers clothed in their picturesque grass hats and coats.

The exuberant Californian at our elbow, after two weeks of fog and water, could no longer restrain

himself so he let out a very undignified yell, with an "O you alfalfa stack, you look good to me."

JAPAN NOT A FAIRY LAND.

There is probably no country in the world so idealized as Japan. After reading the usual tourists' literature, with which every good ship traveling to the East is well supplied, one expects to drop into a sort of fairyland, with marvelous flowers blooming on every hand, gorgeous birds and butterflies flitting about, and always shimmering in the near distance snow-capped Fuji, the sacred mountain of post card, fan, screen, and bric-a-brac fame. But we come back to earth with our first view of the landing place, for, with the exception of the animated hay stacks on the shore, and the hurrying sampans, or native boats on the water,

* This is the beginning of a series of articles on farms in foreign lands. Japan, China, Java, Ceylon, North Africa, and South European Countries will be covered. The series will be continued in the next issue.—Ed.

the setting might be that of almost any European or American port, so far as appearances would indicate.

The business of the sea has become so standardized that there is no longer much variety in docks, steam cranes and donkey engines. There are places, however, where, even with all modern machinery together with steam—the great revolutionizer and civilizer—man labor and woman labor is the cheapest energy that money can buy. But of this more anon. We are at last ashore in the land of the rising sun, and are being beseeched by rows of little jinriksha men to do them the great honor of accepting their services.

JINRIKSHA, THE FULL-MAN-CART.

Here it may not be amiss to say a few words about the jinriksha, the two-wheeled, baby-buggy-like vehicle that has made for itself such a permanent place throughout the orient as a means of getting about. There is no certainty as to the origin of the vehicle. Among other stories is one to the effect that a foreign missionary who found himself possessed of a wife quite stout, and growing stouter, invented this two-wheeled contrivance with which he could transport his spouse without jeopardy to her physical well-being, and at the same time, by virtue of the work he would have to put into the effort, keep down his own tendency to overweight. There were no golf links in Japan in those days. The jinriksha—literally man-power-vehicle,

or man mobile—is the chief means of locomotion throughout nearly all of Japan, considerable portions of China and India, the Straits Settlements, Ceylon and nearby countries. We did not see the vehicle in Java.

In countries where human labor is cheaper than that of the horse or ox, and where there is keen competition for means of making a living, the jinriksha service offers employment to many who would otherwise have to remain idle or seek work in the fields and shops, already overcrowded. The jinriksha man can equip himself with vehicle and uniform, the latter a cotton shirt and short trunks, for from ten to fifteen dollars, and with strict attention to business he may earn this much in a month in some of the larger towns.

There are, of course, all grades of jinrikshas, just as there are all grades of automobiles. The rich merchant may have his expensive, lacquered, rubber-tired machine, costing from seventy-five to one hundred and fifty dollars. Great numbers of the vehicles are, however, very cheaply but serviceably made. A good many are owned by individuals and there are organized companies or associations who own them and lease or rent them to the operators.

There are various modifications of the jinriksha used by individuals, commercial firms, and by farmers for hauling wood, coal, farm produce, lumber, or building materials. Some of them are extremely crude and to an American

accustomed to the use of machinery, seem almost barbarous in the manner in which they require the use of human labor.

It is not uncommon to meet men and women in the country lanes of Japan, toiling through the mud hauling heavy loads of bamboo poles, farm produce, coal or wood on these cumbersome contrivances.



"The Jinriksha Is the Chief Means of Locomotion Throughout Nearly All of Japan and Nearby Countries."

The harness is simple, consisting merely of a broad band around the forehead or over the chest, by means of which the man or woman puts his weight against the load, leaving the hands free to steady and guide it. In some of the hilly towns coal and other fuel, stone and even the sprinkling carts on the streets are pulled about in this fashion by men and women laborers.

A LAND OF HILLS AND MOUNTAINS.

Before starting upon an exploration of Japanese agriculture it seemed desirable that we should

get a sort of general picture of the whole situation by consulting the authorities at hand and utilizing the data which the Japanese government and other agencies place at the disposal of the public. We found that while Japan has considerable land, so much of it is nearly straight up and down that ordinary crops planted on it would be in constant danger of sliding off before the season was over. Whether it is due to the peculiar geologic formation on the comparatively thin soil combined with torrential rains and almost daily earthquake shocks, the land on most of the hill-sides seems to be in a state of perpetual unrest. So of all the land in Japan, amounting to something like seventy-two million acres, or about as much as in the states of New York, Pennsylvania, and Maine combined, only about thirteen million acres is actually farmed. If we draw a line around the counties in New York State, as shown in the accompanying map, all the land actually farmed in Japan could be located in these counties. The whole of New York State contains about thirty million acres of land, and if we draw another line, a dotted one, showing the actual land farmed here, it would have to be as shown on the map outside of the first line, because New York State has about fifteen million acres in farms or two million more acres than has the whole of Japan.

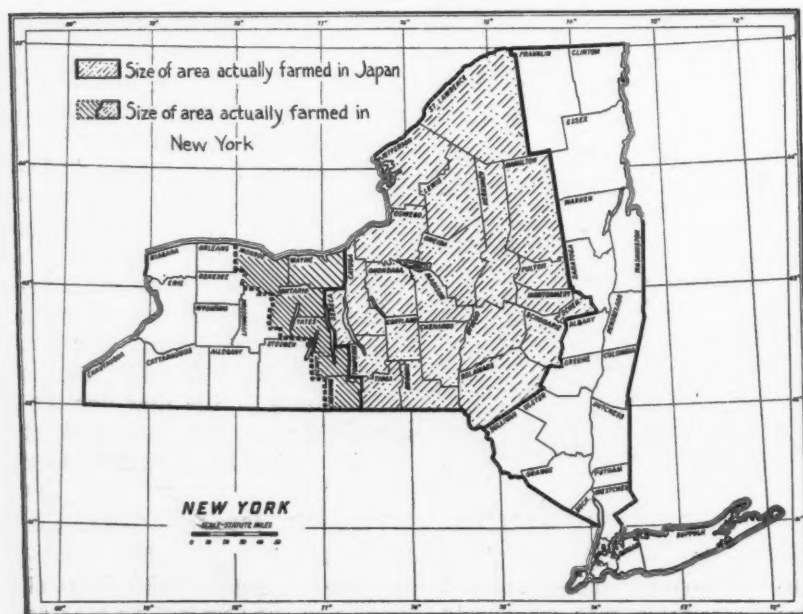
I am speaking only of the Japanese Empire proper, which does not include recent acquisitions such as

Formosa and Chosen. For centuries, therefore, the Japanese farmer has been the bulwark of his nation. With a population about equal to that of Great Britain and Ireland, and cultivating two million acres of land less than is cultivated in the State of New York it will be seen that the Japanese are accomplishing a really marvelous work in the intensity of their production.

ECONOMIC RELATIONSHIPS

It is difficult in brief descriptive articles to give anything but mere glimpses of the economic relationships and balances that have combined to make Japanese agriculture what it is today. Thus we are met at once with the simple fact that the Japanese can no longer afford

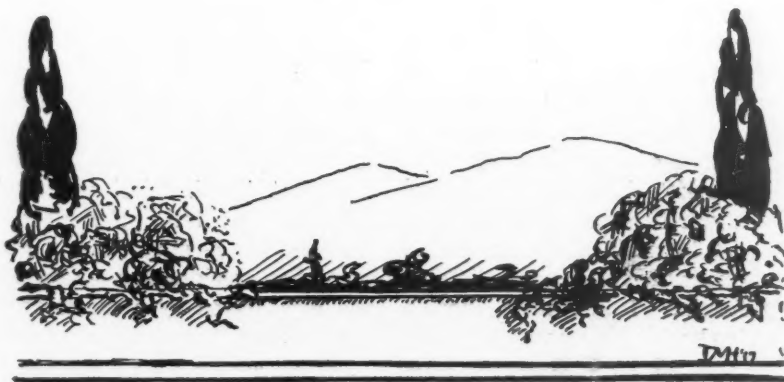
to keep cattle except as beasts of burden. In the course of centuries Japan has found that she can more economically and efficiently maintain the life and vigor of her people by *direct* rather than *indirect* uses of the products of the soil. We are still following the indirect and more or less wasteful methods, but even now we are hearing mummings of the growing scarcity of meat and are noting an interest in the matter of utilizing more and more the crops we grow as food. Natives that have long since worked out this problem may very pertinently ask why waste so much energy by requiring an animal to eat the food that man might just as well eat in the first place. A hundred pounds of corn directly consumed would support a man



twice as long as when fed to steer and the steer eaten. So that in the struggle to supply a large and growing population the Japanese husbandman has become by virtue of the necessity for economy everywhere, a *crop* farmer. These conditions and many others of a complex economic nature have also forced him to become an intensive farmer and a small farmer.

We find that the average size farm in Japan is about three acres. Only about three per cent. of all the farmers in Japan cultivate more than seven and a half acres. The average size farm in New York State is approximately one hundred and twenty-seven acres. There are two hundred and fifteen thousand farms in the state, and twenty-eight per cent. of them are from one hundred to one hundred and seventy-four acres in

size; twenty-six per cent fifty to ninety-nine acres in size. Only a little over one and a half per cent. of New York farms are under three acres in size. A striking feature of Japanese agriculture is found in the fact that on the thirteen million acres of farm land there are about five and a half million farm homes. In the whole of the United States there are about a million more farm homes than there are in Japan. Japan, therefore, may very properly be called the land of small farms, which is in keeping with pretty much everything else in the country including houses, railroad trains, trolley cars, men, women, and children, and even the dogs. All are small, but this fact in no wise interferes with or detracts from the efficiency, economy, and happiness of the people.



At the Exposition

By B. H. Crocheron

State Leader for California. Editor of the Cornell Countryman, 1906-'07

He came in the door equipped with an umbrella and an anxious air. Even though he had aged somewhat, and had acquired a more serious and dignified air, I recognized him at once as the Cornell Countryman.

Well, it was good to see him again after the lapse of years and to renew friendship at the City of the Golden Gate. Said the Countryman, "I'm out here to see the Fair and a little of the farming of California. Can't you take a day off and show me 'round?"

Why—the good old scout—I surely could take a day off. So, I grabbed my Stetson and he grabbed his umbrella and we were off.

But I just had to straighten him out about the farming of California that he wanted me to show him in one day. So, with my best California air, I said, "Countryman, your feet are so tender that you ought to walk on your hands. You come out here and ask me to show you the farming of the state in a day—in the same tone of voice you'd ask to be shown Tompkins County or the State of Delaware." I had sub-consciously absorbed the California "boom literature." "This California," I continued, has a hundred million acres of land—as large as all New England, New York, New Jersey and Pennsylvania taken together. Set down on the Atlantic 'twould reach from

Cape Cod to Charleston, South Carolina and west across the Alleghanies. But it's far more diverse than the same area in the east. The highest and lowest spots of the United States of America are here. I know a county agent who can make snow-balls or pick oranges every day in the year in his own county. One county has nearly eighty inches of rainfall while another has never seen four inches. To travel between the two takes two days and three nights by fastest trains—you went from New York to Denver in less time." But I forgot to tell him, as all Californians do forget, what a small proportion of the state is arable.

"Maybe, you think there isn't any West any more. Say, when I first came out three years ago, I set out to cross this state on its shortest diameter in the north. It took me two weeks by the most approved means of travel. I saw a real volcano, tribes of Indians, cowboys, herds of deer, three bears and at night slept under trees fifteen feet in diameter and three hundred feet tall. For days I traveled by a stage coach that swayed on creaking leather springs and was driven by a figure from Bret Harte."

"When you've got six months to spend, come out and I'll show you California—for I average a thousand miles a week in travel within

the state—but for today you'll have to be content with less."

As we climbed on one of those trolley cars that ride sideways like an Irish jaunting car, I saw him look at it doubtfully till at length a smile broke out. "Oh, I see," said he, "Built 'em this way so you can jump off easy if you hear an earthquake comin'. How's Frisco anyway? Any signs of the shake?"

"We'll begin your education right here," said I. "Never speak of earthquakes in California. They are no more frequent than thunder storms in New York, and, besides, it was a fire that destroyed San Francisco—there wasn't any earthquake to speak of, speaking suphemistically—so we don't speak of it. Then don't say 'Frisco', only hobos and Easterners do that. Don't talk about the 'Fair' either or the 'Exposition'. All west of the Rockies it is known as 'the Expo'. By the way, you can throw your umbrella overboard. You won't need it. Hasn't rained here for three months and, barring accidents, 'twon't rain for three more." After which we looked at the scenery and talked about palm trees and orange orchards and all the sort of stuff that Easterners want to know about the first thing.

When we got on the boat to cross San Francisco Bay, I began to tell him about things just the way the Chamber of Commerce men talk, almost as if I was in the business of selling climate—I told him how the Bay was fifty miles long and five miles wide; that it was the greatest single harbor in the world.

I pointed the way out through the Golden Gate to the west where if you sailed straight through there would be nothing but salt water till you struck the coast of Japan. Then I talked of the city spread over her seven hills like ancient Rome. I told him all of it within sight had burned in 1906, and had not only risen from her ashes in a decade but had built an Exposition



ARCH OF THE RISING SUN

the like of which the world had never seen and perhaps would never see again—for the day of the great fairs, they say, is passing. After all of which I paused for breath.

As the boat swung around the turn the 'Expo' lay before us. Great golden-brown palaces lined the Bay, their domes of ultramarine blue and lofty towers stretched against the sky, flashing and glittering with jewels. Around were the hills that rose from the Bay, opalescent in a dim gray haze that turned their sides to unreality. Over all was the clear blue of the sky that used to belong to Italy but which now is Californian. I left the Countryman to see his own sights and think his own thoughts as the boat swung in to the Marina through the long gray line of bat-

tleships always at anchor off the 'Expo'.

We walked through the courts where fountains flash and endless beds of posies bloom in solid masses of color. We passed under arches crowned with sculpture and graven with verses from the wisdom of the ages. The Countryman strolled along, a happy light in his eyes. Finally, "What do you think of it"? I asked.

"Beats the State Fair at Syracuse," he admitted.

"Haven't they got any cows or anything like that?" said the Countryman.

"Sure," I told him, "Follow me this way," and we jumped on a little motor train that, wending its way through the crowds in a marvelous manner, takes you all around the grounds for ten cents. Meanwhile we chatted with the coin-taker on the train. He turned out to be a student from Harvard out here spending his vacation collecting dimes and western atmosphere.

We got off at the "Stockyards" where low brown buildings stretched over ten acres, their roofs almost meeting over the narrow streets, their tops gay with lines of fluttering flags of the Exposition colors.

The buildings were almost empty. "The recent outbreak of foot-and-mouth disease prohibits importation of any outside cattle," I reminded the Countryman. But the buildings themselves are worth while visiting. As a means of showing cattle they are perhaps the best ever devised. The great emp-

ty show ring in the center is a reminder of what might have been if the dread outbreak had not occurred.

"California is just emerging from the scrub cattle stage that always holds in a new country and is learning that purebred or grade stock always pays. So, the failure of the cattle show, caused by the quarantine, has a bigger significance than the mere emptiness of some barns. It means that California has lost the good stock that would have stayed here and the education of its people that would have brought more good stock here in the future. So, the California College of Agriculture feels a sense of defeat when we look at these almost empty barns." We strolled around looking at the sheep and the hogs, the fine horses and the great herd of Holstein cattle exhibited by a condensed milk firm probably to illustrate the sort of cows their milk ought to come from.

From there we wandered over to the New York State Building where the Countryman wanted to register his name in the big book—after which we gazed in awe about us.

"Heavens, but it looks expensive," said the Countryman. It was. There were stiff-legged gilt chairs ranged in thin ranks along silk-covered walls. Electroliers with glittering glass prisms hung from a carved ceiling adorned with gold leaf and bright pigments. There was a half-acre of inlaid floor, magnificent in its emptiness, from the other side of which a phonograph weakly drawled forth

ragtime. "What a lot of money it must've cost" repeated the Countryman, "but where are the exhibits?"

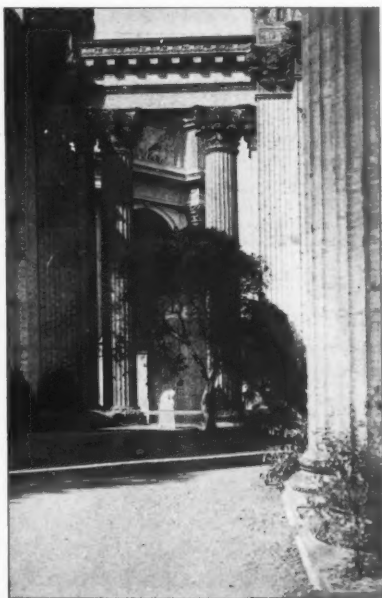
"There aren't any—at least not here," I told him. "The building is empty but there's a restaurant on one end where you can eat if you're a New Yorker—and if you have the price. It's proudly exploited as the most expensive restaurant on the grounds. The building shouts money and emptiness. This has given some folks from other states the opportunity to remark that the building typifies its state, or at least its metropolis, better than most. But we wouldn't say that, would we, Countryman?"

"No-o-", he said slowly, "no we wouldn't say that, at least not till we get back home" and we walked into the New Jersey building to rest for a little in its comfortable rooms, conspicuous for their good taste and simplicity.

On the way toward "Agriculture" we stepped in "Education" to look at the exhibit of the U. S. Department of Agriculture where are shown the various activities of the colleges of agriculture. It was there we saw Doc. Warren's Farm management charts labelled "Cornell University" before which we swelled with pride and read in detail the figures of a farm survey. We even got down on our knees to turn over the pages of the "Day Book" and "Work Report" where they were anchored fast to the bottom of the exhibit case. We walked around that case till we excited the suspicion of an attendant.

From there we went on to the "Agriculture Palace" which covers seven acres. We walked over that seven acres as thoroughly as though we were harrowing it.

The first thing that struck the Countryman was the Massachusetts exhibit with a great sign commanding "Come East, young man, to Massachusetts" before which we



"The Exposition Is the Most Inspiring Sight in America"

both stood in admiration. "Mighty clever," said the Countryman.

Indiana, and the other corn states shone with their great exhibits of the "king of cereals." There were ten ear exhibits of prize ears beyond number. Iowa showed a great horn of plenty from which streamed a pile of yellow dent forty feet high.

About the middle of the building we struck the exhibit of the New York State Department of Agriculture which, of course interested us both. The Countryman looked it all over carefully. There was a relief map of the state showing the cheese factories by wooden blocks, a muslin sign that moved by an electric light and told of the many things in which New York excels.



PALACE OF EDUCATION

"Guess they spent all the money in the State building on those gilt chairs, and the like, said the Countryman, as we moved sadly away.

The Agriculture Building was empty of sight-seers except where in one corner a caterpillar tractor was in operation being guided by a young man who put it through the maxixe and fox-trot just to show how cleverly it could step about among orchard trees.

"But where are the folks," said the Countryman, "the building's as empty as Ithaca in late August."

"Why," I answered, "they're all where something's doing." "Folks don't want to look at packages of seed and bundles of hay. They're in the Transportation Building watching them make Ford automobiles, a Ford in three minutes, or they're in Food Products watching

them cook fried cakes in olive oil—and eating the said cakes as fast as ten perspiring negroes can cook 'em; or—come this way and I'll show you" and we walked across to Horticulture Hall, a great gray-green glass dome set in the middle of an architectural effect clearly copied from a bridal cake.

Under that horticultural dome there was a jungle of palms, ferns, flowers, fish, and birds, amongst which people wandered on gravel paths. "This thing's alive," I reminded the Countryman, "and the folks are here." We went into a side room where a canning factory was in operation and a crowd of folks watched carefully each peach which the young men put in the tin cans. Opposite was an orange packing-house in full blast with the yellow fruit gently rolling from tray to tray.

We stopped outside to see the wondrous horticultural exhibits of Holland and Japan. Holland has bulbs and plants and trees beyond number while Japan has gardens that cover seven acres filled with dwarf trees, many of which are reported to be hundreds of years old. About these gardens we walked till the Countryman complained that the pavements were harder than he'd ever struck—he'd "rather plow any day"—and confessed that he had on a pair of new shoes. So, we sat down in a Japanese tea pavilion where a tiny lady with cheeks like porcelain and hair like black satin, slipped about in a gay kimona bringing us tea and rice cakes. About us were lagoons,

bridges, stone lanterns, gnarled and twisted trees, and in the foreground a bare-legged Japanese in a wide hat waded about the lagoon catching gold fish in a net.

After our tea the Countryman said, "Now, I've gotten far enough in this job to see I've got to skip nine-tenths of it and hurry through the rest of it. No man could see it all in a month of Sundays. Tell me what are the best things to see. What's new? What can't I afford to miss?"

"Well," I said "the best thing in the show is the show. By that I mean the Exposition as a whole is the great thing. The supreme financial effort of the west, the combined art of the nation's architects, the color dream of Jules Guerin are all here with the wares of the world to make the 'Expo.' Don't spend too much time looking at the details. Get off and get the mass. Feel the thrill in the fluttering flags, the lawns and palm trees, the dreamy courts and the blue bay with its battleships and Mount Tamalpas on the horizon. Watch the hundred thousands that sift through the gates in a day. Get your head up to see the bigness of America and be proud of it.

"The thing that's different about this show—the new note in the exposition—is community welfare through social service. The last ten years has seen a moral development in America. The Buffalo fair struck no such note. It wasn't in the scale then. We've increased the register."

"Because you wanted it we've looked today at cows and corn and

such. All that is incidental. The exhibits that are worth while are in the Education Building and are scattered through the exhibits of Liberal Arts and the States. They are worth while because they are new. Never before has such a monument been reared to achievement as these concrete expressions that a nation has found itself—found itself in the welfare not of individuals but of communities. See the Gary schools—see Madame Montessori herself conduct a real school—see the Rockefeller hookworm exhibit; yes, and the Salvation Army exhibit, and the Battle Creek better babies show. Spend a few minutes thinking about that great county free library map—and then if you want, go back to the dry grains packed in moth balls. But enough of work, let's roll along."

So we stepped out to a trolley train that slid along down the Avenue of Palms and down the zone to the "Yellowstone Park." There we dined at "Old Faithful Inn" while Sousa's Band played for us and colored lights were thrown on an artificial waterfall seventy-five feet high supposed to represent the great falls of the Yellowstone.

"I've never seen the Yellowstone," said the Countryman "but I guess that waterfall looks as much like the real thing as tin-canned beans taste like the kind mother used to bake."

As we came out the Countryman glanced at the sky. "Glad I got my umbrella," he said "looks like rain comin' up." But I told him it

was only high fog drifting in from the ocean after sunset.

We hired an electric wheel-chair which the Countryman ran over all the bumps. You've seen those electric chairs, haven't you? Well, they're sort of old ladies' automobile reduced to child's size. When you've got new shoes and have been doing the "Expo." there's nothing finer than to ride in one and watch the other folks walk.

So we rode around in a wheel chair. The lights were just beginning to come up in the buildings. Here a stained glass window showed up warmly, there a chain of columns glowed from hidden lights. Out through the Golden Gate the last glow faded from the embers of the day.

We drove through the courts where strange lights shone from pools of water, where statues came to light breathing flames and huge urns became caldrons streaming red. Fountains splashed colored drops and against the blackening sky stood forth the giant figure of an archer white in the still glare of a searchlight.

"Look!" I said, and we turned to see the Tower of Jewels lighted for

the night, shining in the reflected glare of many searchlights, tinted pink and green yet changing ever like nothing in all the world so much as a glowing coal from a hickory fire.

Then the scintillators began their work. Thirty searchlights threw colored beams on the high fog-clouds above us shifting back and forth 'till the Countryman and I could only think of the night we had, together, seen the Northern lights on Cornell Heights.

The "Expo" at last was alight for the evening—yet not a light was to be seen. "Indirect lighting" I explained to the Countryman—but he answered me not a word only continuing to steer the rolling chair through courts, past palaces in silence.

It was time to go. "What do you think of it?" I again asked the Countryman.

He rose gallantly and magnificently to the occasion.

"I'll quote my fellow-citizen of New York, Theodore Roosevelt, and tell you that the 'Exposition is the most inspiring sight in America.'"



THE GOLDEN GATE

The Soils and Agricultural Development of the Hudson Valley

ARTICLE NO. 6

By Elmer O. Fippin

Professor of Soil Technology, New York State College of Agriculture
at Cornell University

This is the sixth article in a series started last year entitled "An Agricultural Survey of New York State." For further details of the series see the Editorial Column.—Ed.

The Hudson Valley region which forms the southeastern eighth of the state, lies east of the Catskill and Adirondack escarpments and has in general a rather low elevation. It is characterized by the much folded, tilted and metamorphosed condition of the rock, the surface of which rock formations is exceedingly uneven in detail and protrudes through the soil in many places cutting the tillable land into irregular and often small areas. There is a large amount of untillable land suited only for pasture and forestry. There is, therefore, great diversity in the soil conditions and in the agricultural development of the area.

Location and extent—It is slightly wider in the southern than in the northern part. The region extends from Long Island Sound to the lower end of Lake Champlain. The Hudson river crosses the area in a direction roughly diagonal from its northwest to its southwest corner, and as the river runs nearly due south, this means the region has a slight northeast-southwest trend and conforms with the underlying and adjacent rock structures.

Parts of thirteen counties are involved with a total area of about 6200 square miles. From the foothills of the Catskills, the region extends to the east line of the state reaching up the western shoulder of the Berkshire hills.

Division and topography—The Hudson valley region is conveniently divided into two parts due to differences in topography, rock conditions and soil conditions. The Palisade region forms the first or southern division. Its northern boundary is a diagonal line that crosses the Hudson at Newburg. It includes the eastern quarter of Orange and Dutchess counties and the region to the southward. The topography is bold and mountainous, due to the protrusion of the trap rock ridges and domes. The elevation gradually falls to the southward and the soil and agricultural conditions improve correspondingly.

The remainder of the region is embraced in the second division. The topography is rolling to quite hilly but the elevations are nearly all under one thousand feet, and the general rise of the county makes them appear less high. In general

outline the region is a broad shallow trough that rises on the east and west sides to the maximum elevations.

The Hudson river does not form a distinct bottom land but flows in a narrow low walled gorge. The tide reaches up as far as Troy. The channel is deep due to pre-glacial erosion when the country stood at a higher level.

The remainder of the region is a very irregular net work of valleys and ridges almost entirely without that regularity of form that results from normal erosion.

Geological Structure—The underlying geological structure has already been pointed out in a preceding article in this series. In the first or southern division the prevailing rocks are the trap that forms the Palisades and micaceous gneisses to the eastward. They form bold ridges and have contributed volumes of boulders to the soil.

In the second or northern division, the prevailing rock is sandy shale and sandstone of the Hudson river group, interspersed with calcareous deposits. The folding and pressure to which the region has been subjected has progressively metamorphosed the rocks from the west to the east into slates, quartzites and marble, which are best developed along the eastern side of the area. As a result of the sharp folding, a large part of the rock strata stand on edge or at a high angle which fact is largely responsible for the rough surface, the numerous rock exposures and the

choppy character of the soil areas. The shales and sandstones are generally gray or bluish in color and low in lime, except limited areas in Washington and Rensselaer counties that give rise to the Cossayuna soils. Limestone or marble has a relatively small development and owing to its softer character is generally masked in the valleys by surface deposits.

Glacial action—The glacial advance in this region was over the rough upturned edges of the rocks just described. The general movement was nearly north and south—slightly southwest. The rock eminences were ground down but often not covered. The hollows were filled with detritus. The dominant soil condition is, therefore, glacial in character and very stony in nature.

During the retreat of the ice sheet the drainage water passed off through the irregularly filled valleys and left terraces of gravel, sand and loam that were later removed in large part by the cutting of the streams. In some places lakes and ponds were formed in which clay, as well as sand and gravel deltas were formed. These lakes are nearly all on the course of the Hudson river. Below Poughkeepsie there were small side pockets between the remnant of ice and the walls of the valleys. From Kingston and Rhinecliff northward to the Champlain valley there was a continuous though narrow and irregular lake which is based by a deep clay formation, over which an irregular sheet of

sand is distributed and on either side of which the inflowing streams have found gravel deltas.

The largest of these is that of the Mohawk river between Albany and Schenectady. The Saratoga sand plains were formed by the discharge from the Lake George channel. On the eastern side the Hoosic and similar west flowing streams formed extensive deltas in the lake and a succession of

types are the silt loam which represents the deepest accumulations of glacial till, the shale loam and stony loam. The silt loam is also least stony although stone fences made of field stone from that type are common. This is the leading agricultural type of the series. It is practically free from rock outcrops. The subsoil is clayey and sometimes approximates a clay loam which is frequently quite



An Example of the Rough Stony Land With Thin Soil That Occupies Large Areas Through the Hudson Valley Region

sandy and gravelly terraces along their courses.

Chief soil divisions: Glacial soil—The dominant glacial soil of the northern division is the Dutchess series. This resembles the volusia series of western New York in being formed by glacial action from non-calcareous gray shales and sandstones. The soil is prevailing-ly dark gray to light brown in color. The subsoil ranges from light brown to a bluish gray color. The heavier types predominate and all are quite stony. The three leading

compact. The compact nature of the subsoil makes defective drainage. The supply of lime is deficient for the growth of legumes and plants indicative of an acid condition are common on neglected fields. A large part of the tree fruit production in the valley is on this type of soil. The prevailing crops are hay and grain—corn, oats, buckwheat and rye. Dairying is the most extensive industry.

The stony loam and the shale loam differ chiefly in the character of the rock of which they are large-

ly made up, the latter being a soft, thin-bedded shale that forms a heavy loam and the other is a more massive sandstone that produces a silty and sandy loam. Both types are thin and the protrusions of the underlying rock are of frequent occurrence. In the pockets between the rock exposures the soil has a good depth and is of good quality but the areas are often so small and irregular that they cannot be tilled to advantage. Because of these characters they have no distinctive agricultural developments and are largely in pasture and timber.

Where the limestone and marble have entered extensively into the formation of the soil, a chocolate color is developed and the texture is usually a loam to heavy fine sandy loam. The depth is variable and limestone ledges occasionally protrude. There are not many stones in the soil. The well developed Dover types are the best of the glacial soils in the valley but their occurrence is irregular and very limited. They occur in the minor valleys as irregular and often elongated areas. They are usually the basis of good farm conditions. Because of the close relation to other series the Dover soils have not developed any specific practices. They are excellent for fruit, including bush fruits, and for potatoes, in addition to grain and forage crops.

The most important areas are developed in the valleys in Columbia, Dutchess and Orange counties.

The drainage is usually quite good. Lime is likely to be bene-

ficial for the crops most sensitive to an acid soil.

Through the center of Washington and Rensselaer counties a calcareous sandstone gives rise to the Cossayuna stony loam, a glacial heavy sandy loam soil of a dark brown color and good crop producing capacity. It is a fairly deep formation over large but rather smooth hills in the middle parts of those counties and was formerly a very successful soil for the production of potatoes.

Clover succeeds fairly well and alfalfa has been grown on this type with the addition of lime. Forage crops and hay make a good development and dairying is the prevailing industry.

In the southern division of the valley the glacial soils of a micaceous character derived from the gneiss and trap rocks form the Gloucester series, the loam and the sandy loam being the prevailing types. The former is the more productive. These soils occur wherever there has been a deep accumulation of till and the depth varies extremely. It lies in the higher rock hollows and passes and the areas are irregular. Especially in the southern part through Westchester county, there are many large boulders in the soil that interfere with tillage. When cleared of stone and the numerous wet pockets drained, both types respond to good handling and a wide range of crops may be grown. The loam is generally the more productive of the two types.

Glacial lake and terrace soils—

The soils deposited by water fall in three main groups: The first of these represent the glacial lakes, the chief of which has been mentioned as lying along the Hudson river northward to the Adirondack foothills. The deposits are chiefly the finer sediments derived from the inflowing streams from the northeast and west country. They form grayish to light brown clay formations in the form of undulating plains with steep sided slopes along the larger streams. This division of soils has been called the Hudson series although the soils may ultimately be correlated with the Vergennes lake deposits of the northern part of the state to be discussed in a later article. The clay loam and the sandy loam are prevailing types and their natural fertility is not high. They are deficient in lime, low in organic matter and often poorly drained. The sand formation generally overlies the clay and when very deep may

be drouthy. When of intermediate depth—three or four feet—and well-drained it makes a good soil. These lake plains are well developed above Troy and between Albany and Schenectady. These soils are the basis of an agricultural development that ranges from rather poor to rather good, depending much on the management of the soil. Individual farms may have a very smooth or a very rough surface, depending on the extent of erosion.

Closely associated with the lake deposits and often overlapping them are the gravelly and sandy delta terraces of the inflowing streams. Where the material is prevailingly the shale and sandstone derived from the Dutchess series, the Hoosic series is formed. Where the waste is markedly calcareous from the influence of the Dover series the Fishkill or Fox series is formed, and where it is

(Continued on page 50.)



A FERTILE VALLEY IN CENTRAL HUDSON VALLEY REGION

The Summer Traveling Practice Course as a Means of Teaching

HORTICULTURE

California now requires experience under an instructor before graduation

By J. Eliot Coit

Professor of Citriculture, College of Agriculture at the University of California.
Editor of the *Countryman*, 1905-'06

The rapid development of Agricultural Colleges in this country has resulted in the enrollment of an increasing proportion of students who have been reared in the cities. It is quite possible for such persons to pass creditably all the courses required by the college and graduate without having had any practical experience on the farm. Inasmuch as the attitude or actions of such students, although entirely innocent in themselves, may create a prejudice in the public mind against the Agricultural College, it appears to be the duty of the college to provide a remedy.

Different Agricultural Colleges have met this problem in different ways and with more or less success, although none have gone to the extent of furnishing practice work after the manner of Schoolmaster Squeers in "Nicholas Nickleby."

When Dean Thomas F. Hunt came to us three years ago, he favored a requirement of summer practice work. Accordingly the faculty passed a ruling making a summer practice course of six weeks duration a uniform requirement for graduation. It is required that this course be taken at the end of the Sophomore year, af-

ter the student has completed the four agricultural fundamentals: Plant propagation, soil technology, genetics, and agricultural chemistry—but before he has chosen his major subject. Six units credit are allowed but six units were at the same time added to the total number required for graduation.

Students enroll with the Recorder a month before the course begins in order that the professor may know the number to arrange for. It has been found impracticable to handle more than 12 or 15 students in a traveling course as we give it. Ten is a more desirable number. As soon as the number is known a schedule is made out covering the entire trip. Such a schedule shows the hotels, the railroad lines and the hour of arriving and departing from each town visited, together with the mileage. It also outlines the work to be done in each place. During the course students are required to put in all their time except Sundays. In the regular university courses the theoretical amount of successful effort required for one unit credit is 45 hours, while in the Summer Practice Course 48 are accounted for. Time consumed in daylight travel is utilized by taking

notes on soils and crops passed, not in card playing.

The bulk of the work as carried out in the Summer Practice Course in Citriculture consists in visiting and making a careful study of typical fruit ranches in all parts of the state. Arrangements are always made beforehand in order that the owner or superintendent may be on hand prepared to render assistance

two of the best arranged houses. Citrus and semi-tropical fruit nurseries receive their share of attention as well as many other things of horticultural interest. During our 1915 trip, written reports were submitted on fifty-seven fruit ranches and many others were visited incidentally; twenty-one packing houses; six citrus and semi-tropical fruit nurseries, and



PROFESSOR COIT'S CLASS IN AN ORANGE ORCHARD

and give information. Each student is provided with a blank form which must be filled out for each ranch visited. This form covers location, soil-type, soil management, acreage, varieties, condition of trees as to disease and pests, irrigation, yields and returns, pruning, fertilization, fumigation, orchard heating, and many other points. Much time is also devoted to a study of typical packing-houses. Where time permits, a sketch to scale is made of one or

sixteen miscellaneous interests. These miscellaneous items included: The fruit and other horticultural exhibits at the Panama-Pacific Exposition; a visit to the offices of the Chief Horticultural Quarantine Officer of the State; the State Horticultural Commissioner and Insectary at Sacramento; the U. S. Bureau of Plant Industry, Plant Introduction Gardens at Chico; the University Farm at Davis; the Kearney Ranch at Fresno; The Gate-City Pre-cooling Plant at San

Bernardino; a citrus by-product factory; the Citrus Experiment Station at Riverside; the San Diego Exposition; a commercial fertilizer factory; the general offices of the California Fruit Growers' Exchange where we arranged for a series of lectures by Manager Powell and the heads of the various departments; the University of California Pathological Laboratory at Whittier; the Los Angeles aqueduct; two plants devoted to the manufacture of citrus packing-house equipment and supplies; a commercial fumigating company in operation at night; the Los Angeles City Market; Headquarters of the Los Angeles County Horticultural Commissioner; three olive oil mills and pickling works; and the offices and printing plant of a leading agricultural newspaper.

The general plan of our trips has usually been to start at Berkeley as soon as possible after all members of the class are through with examinations and other University duties. Orchard studies are begun at Fair Oaks in Sacramento County and proceed northward on the East side of the Sacramento Valley as far as Tehama, thence south through the west side of the valley to Davis. A jump is then made to Fresno, where the fig and olive orchards claim attention. The route then lies south through the San Joaquin Valley and the Tulare Citrus district. From Bakersfield we proceed to San Bernardino, Redlands, Riverside, Corona and Orange. The lemon orchards of San Diego County are next visited and

the route doubles back to Los Angeles where headquarters are established for a week while the outlying districts of Whittier, Pasadena, Monrovia, Covina, San Dimas, and Pomona are reached by electric trains. We next go to San Fernando and from there to Santa Paula which in many respects is the most interesting stop of all. After the studies of the Rancho Sespe and the Limoneira have been completed the class is dismissed at Santa Paula. This year the class traveled 1729 miles exclusive of automobile transportation.

There are no fees required of the students but each man bears his own expenses. As each man spends according to his personal tastes there is considerable variation in the expense accounts. Legitimate traveling expenses vary from \$120.00 to \$200.00 averaging about \$140.00.

Each student is required to keep two note-books, a small scratch book for field notes and a regulation note book into which the field data are copied and expanded. We have found it important to insist that all notes be copied each evening wherever possible and not allowed to accumulate and get cold. Rather extensive notes are required and the student who turns in the best set of notes is entitled to have them typewritten free, a carbon copy being bound and retained by the Division of Citriculture as a record of the trip. Many sets of notes are illustrated by photographs and sketches and this of course adds a great deal to their value.

Owing to the fact that the trip is circuitous in nature not doubling back over the same railroad lines, special reduced rate tickets are not available and it has been our custom to buy mileage books which are very convenient and affect some saving.

Our policy is always to go to a town with the idea of walking to the various ranches or of hiring an auto truck or jitneys. It often happens, however, that ranchers and public spirited citizens offer the use of automobiles. This of course is a great help, but it has been found not for the best interests of the class to accept auto transportation furnished by the local Chambers of Commerce for the reason that it often happens that the persons conducting such a trip are more interested in showing the boys the country and the most successful ranches than stopping long enough in one place to study adequately any given ranch. Although joyrides have a certain value when taken in a locality new to the observer, they are not productive of the kind of notes which should be secured.

At least once a week the class assembles in the evening for the purpose of discussing the things seen, comparing notes, and answering questions. Students have to be cautioned beforehand against discussing or criticising the practices of one locality too much while still in the locality. Such criticisms and comparisons of one locality with another had best be left to the

weekly meetings which are always private.

It is unwise to entrust a traveling course to one who has not had considerable experience in handling men. The students must be made to feel that they are representatives of the College and that farmers generally are very likely to judge the College by them and their behavior.

The original idea of these courses was to furnish practical experience. We have honestly endeavored to introduce as much practical work as possible but owing to circumstances over which we have no control we have found that it is not possible to give the boys as much practical hard work as was at first hoped. While we have succeeded in securing a certain amount of practice work we believe that much of the observation, note taking and discussion is of as great or more value than mere practice work. At one orange grove we have the men prune for several days. If we find a man setting out a young orchard we stop, pull off our coats and help him for a half day or a day. If we find a crew fumigating at night, we make arrangements for the boys to take turns pulling tents so that each man may get choked with cyanide at least once! It is valuable for students to dig out and examine the root systems of trees which appear to be sick. Sketching a modern packing-house to scale is a good problem, but so

far it has been impracticable to actually pack fruit. The packers are too jealous of the reputation of their brands to turn such a number of greenhorns loose at one time.

It has been our custom, at the end of each trip, to require from each student a written report on some item which has especially impressed him. These reports are criticised and polished until they are considered satisfactory for publication in some horticultural journal.

As this summer practice course is now required for graduation, some may wish to enquire what becomes of the man who has not, and cannot readily borrow the necessary one hundred and twenty-five dollars. Obviously he would be lead by necessity to elect the summer course which was the cheapest rather than the one in which he was most interested. To overcome this difficulty we have divided the summer practice course into two sections. Section I is the traveling section. Those who enroll in Section II are required to work for twelve weeks on some acceptable citrus or semi-tropical fruit ranch. Each student finds his own employment (although he is assisted by the College) and receives whatever wages he can secure. He is required to keep two sets of books, a journal describing his daily tasks in detail and a farm management survey with maps of the ranch. He reports periodically by mail to the Professor in charge. Thus the needy student may gain practical experience and save \$125.00 at the

same time. Of the two sections, No. I is preferred on account of its greater educational value and broadening influence. It is a fair question for debate whether the six units credit should be given those who choose Section II.

The plan of Section II usually works well, but one disadvantage is that some grasping employers are unwilling to transfer the men from one kind of job to another on account of a slight loss in returns. For example, when a man gets accustomed to pruning, the farmer may wish to keep him pruning all summer, whereas the student desires some work irrigating, cultivating, picking and the like. This problem will be met by gradually selecting certain practice farms where students may be sent in groups. Here they will receive a little less pay with the understanding that they be shifted from one kind of work to another according to a certain schedule.

We have also been confronted by the problem of the women students and this general requirement for graduation. After an effort to work out a plan by which the women could be accommodated on these trips, it has finally been decided that it is inexpedient and women are allowed to offer six units work in the regular University summer courses at Berkeley in lieu of this requirement.

Another question which has been repeatedly raised by the students themselves is—When is the proper time to take a summer practice

(Continued on page 58.)

Greetings to New Students in the College of Agriculture

By James E. Rice, '90

Professor of Poultry Husbandry, New York State College of Agriculture
at Cornell University

Cornell is a place where students can find themselves. Here one is expected to get his measure and obtain a proper perspective of his relationship to others. It may well be said that Cornell is a good human measuring stick. To be measured by the University standard is, of itself one of the most important essentials to a liberal education. The fact that students who enter Cornell are obliged to satisfy a high standard of educational requirement, and the fact that they have the reputation of coming to Cornell to get what they want, rather than of being sent here to secure what others think they should have, attracts students who are as a group, a high type by which to be measured.

Many a student after a few months at Cornell learns that there are many degrees of bigness. He discovers his own shortcomings and limitations and grows by striving to attain to the high ideals set by his associates. To meet the transition from preparatory school to college, he simply follows, day by day, an even course, doing as perfectly as possible the daily work and each day meeting the new problems, new responsibilities and larger tasks as they arise.

An intimate acquaintance with many college students suggests a

few observations. They may be considered as first steps in the right direction in getting a college education. First consideration should be given to maintaining a perfect physical condition. This spells physical, mental and moral efficiency. Good health is the key to good nature, moral courage, happiness and clear vision. Most humans, like most properly constructed machines, work most smoothly and efficiently when running close up to top speed. This implies the living of a strenuous life. It will require, on the part of the student active participation in some regular relaxing physical exercise, preferably in the open air. The effect will be beneficial or detrimental depending to a large extent, upon the point of view of the student. If considered as helpful relaxation and counted in terms of more bright red blood corpuscles, it will be joyful living. In reality it will be play.

The second consideration, after having developed a perfect working human machine, is to secure proper mental training and the acquisition of knowledge. This education must include seeing, hearing, feeling, understanding and doing things. Part of this education may be acquired in private study in library and class room,

but nearly, if not quite as important, is the education which one may acquire by personal contact with student and faculty in college activities. Both are essential to a well balanced education. The real standard of measurement and final test of education is what the student is able to do in terms of efficiency when struggling with life's problems. The great battle will be determined by what the student has built into his system and puts into active service rather than by what he has taken up by the mere process of absorption.

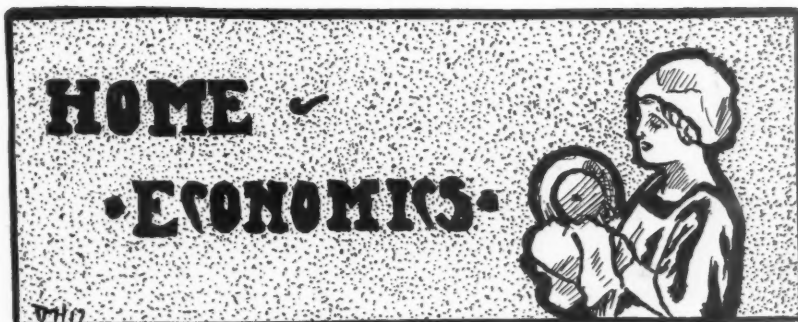
Some of the more important factors of a well rounded college education are: a knowledge of human nature; a workable co-operative spirit; a kindly, sympathetic interest in others; the faculty of seeing the other person's point of view and some of those good old-fashioned personal qualities of push, persistency, pluck. These frequently are the factors than win the race. They may be largely developed in college. The student whose sole aim is to secure high marks to the exclusion of the other educational factors will lose much of the keenest satisfaction which should come from the pursuit of a college education. The best results are to be secured from a well balanced blending of serious application to study and a whole hearted participation in wholesome student activities.

A third factor of vital importance to the student who seeks to accomplish the greatest results during his college course is a thor-

ough organization of time, which involves the making out of a well balanced program for each day in the year. Every minute must be made to count. The race is for four years over a new course and can be run but once. Those who are at the start waiting for the word "go" have been in training for many years in school, in shops and on farms, preparing for this event. The victory in running the college course will go to those who plan a well balanced program of sleep, recreation and study.

Somewhere in this program the student who gets the most out of his college course must plan to recognize and meet a personal obligation which he owes to himself, to the state, to the nation and to his Alma Mater. This obligation is the duty of a student to give as as to receive. Cornell students the day they enter, become a debtor to the nation, to the state, to the founder and to all who have made it possible to provide the splendid educational facilities which he enjoys. Every student owes a further debt to his parents. These debts cannot be paid in money alone. They can only be paid in the coin of loyal service and success.

This then is the student's obligation to society, to his parents and to his Alma Mater: to throw himself with whole heart and without reserve for the next four years to the task of preparing for the greater battle which is to follow the completion of the college course. This perhaps is your greatest opportunity. Make the most of it.



A Greeting to Freshmen in Home Economics

By Claribel Nye, '14

History repeats itself. We who have graduated from the College of Agriculture, Department of Home Economics, well know how much you have anticipated coming to College. There have been many hours of thought spent upon planning the clothes which should be made and perhaps, as was the case with many of us, long hours have been spent in planning ways and means of paying expenses. We are glad you have decided to come. The value of college training with its instruction, social life, friendships, and opportunities to meet persons whose ideals and whose scholarship are an incentive and an inspiration, cannot be measured and cannot be realized except by the experience.

College offers unbounded opportunity for self-development. What kind of person you will be four years hence depends almost entirely upon yourself. You will get

as much as you are determined to get.

The following suggestions are offered by a Freshman of long ago. I. Keep the standard of scholarship high. A graduate of 1914, one who has already achieved unusual success gives as her advice to Freshmen this very admonition; and adds: "Every day in my work I am thankful for the knowledge and training I received by constant conscientious study. I could never have succeeded this year had I skimmed through the University." It is better to be classed as a "grind" than to finish college knowing well that you are unprepared for your piece of work.

I. Determine in your Freshmen year to make the senior honorary society in Home Economics.

By keeping your scholarship high you will have met the first requirement. By entering into the

student life you will have met a second requirement.

Remember that equal in value with scholarship is that training which comes from working, playing, and developing work with other persons. Student activities are very important. Make it your business to take an active part in the affairs of your class; attend its meetings; express yourself on the subjects under discussion. Attend "get-wise" meetings, receptions, teas, and other functions which are arranged for the purpose of welcoming you to the Uni-

versity and of giving you the opportunity to meet persons with whom you will be associated.

Join Frigga Fylge, the club to which every girl in the College of Agriculture is entitled to membership.

II. Catch the spirit of the Home Economics Department—this means an interest in people; loyalty to the University, to the College, and to the Department; an enthusiastic cooperation in all that pertains to Home Economics; devotion to the traditions so jealously cherished by all the graduates.

A Few Words to the Women

By Gertrude S. Martin

University Adviser of Women

To be asked for a "message" to the women students of the University at the opening of this new academic year—it is embarrassing, even a little appalling, to one who knows that she is not among those fortunate souls to whom are vouchsafed "messages" for the rising generation. Greetings? Yes, and those right hearty; hopes and good wishes without end; but oracles? never; that would be humorous. This is, therefore, no authoritative communication, no "message," not even advice; it is just my "wish" for the large body of young women who enter or re-enter the doors of their Alma Mater this fall.

If I were a fairy godmother I should be limited by a tradition, too long and too respectable to be broken, to three wishes. Being just a common mortal and therefore quite naked and unashamed in the mat-

ter of traditions, I can go on wishing and wishing through all the summer day, if I so choose, and none to say me nay. To be sure, the fairy godmother, backed by all the mysterious powers of fairyland, has the advantage of me in this—that her wishes must come true; while mine—well, mine *may* come true; that all depends on whether my wishes for you shall prove to be also your wishes for yourselves.

What do I wish for you, then? First health, physical and mental, sanity of body and mind. This is of fundamental importance. Without it the most extraordinary talents and endowments may be perverted and are at best cheated of their potential effectiveness. With it even mediocre abilities will carry you far. And health is not a matter of "luck." Except in the rarest

instances it is strictly within your own control. Moreover, the world knows this fact; and to be an invalid now is almost certainly to convict yourself in the eyes of intelligent persons either of unpardonable ignorance or of criminal folly. The time is past when we can live like lunatics and attribute the inevitable results to an inscrutable Providence.

Next I would wish that you might somehow acquire, if you have not brought it with you, the power of concentrated and accurate thinking. Twenty years from now by far the larger part of the information which you are so laboriously accumulating during these four years will be more or less completely forgotten, and of the rest, not a little will have been proved erroneous. The best result, almost the only permanently valuable result, that this four years' intellectual effort can yield for you is the power of sustained and accurate thought; and never in history has there been a generation of women who have so needed this power.

Next I should wish that you might come to understand through personal experience the deep meaning of that profoundest of sayings that he who loseth his life shall save it; that you might get a vision of your life as an objective thing, your one true work in the world, *your* contribution, your creation to make or to mar. It is the one task at which you are always laboring, no matter what your ostensible employment. You say you are making a *living* by teaching school, or writing books or

painting pictures, or creating a home, but what you are really making is not a living but a life; and no matter how fine your teaching, how great your book, how beautiful your picture, how lovely your home, your life in its entirety, of which these are but by-products, can only be truly successful in so far as it proves serviceable to your fellowmen.

Whether your college life shall yield you these results and more besides or whether it shall prove barren depends on how you use it. "At college, if you have lived rightly," writes Dean Briggs to college girls, "you have found enough learning to make you humble, enough friendship to make your hearts large and warm, enough culture to teach you the refinement of simplicity, enough wisdom to keep you sweet in poverty and temperate in wealth. Here you have learned to see great and small in their true relation, to look at both sides of a question, to respect the point of view of every honest man or woman, and to recognize the point of view that differs most widely from your own. Here you have found the democracy that excludes neither poor nor rich, and the quick sympathy that listens to all and helps by the very listening. Here too, it may be at the end of a long struggle, you have seen—if only in transient glimpses—that after doubt comes reverence, after anxiety peace, after faintness courage, and that out of weakness we are made strong. Suffer these glimpses to become an abiding vision, and you have the supreme joy of life."

THE CORNELL COUNTRYMAN

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Greetings

The COUNTRYMAN extends a hearty greeting to both old and new students at the beginning of the college year of 1915-1916. We hope you will enter into the spirit of the college more than ever and make this a banner year all around. Of course, everyone is here primarily to learn, but that is only one of the many things which a well balanced college course includes. Take an active part in student activities and make it a point to be doing something for the University and your College. The Cornell Standard is a high one any many fall in the climb to reach it, but those who do attain it are repaid a thousand fold. It's up to you.

Safety First

In the rapid growth and development of the College of Agriculture one vital course in the list has been grossly neglected; namely that of a course in public speaking for the instructing staff. Just as every student is required to have a certain number of credits in actual farm experience before he is granted a diploma, so it should be that every professor and instructor engaged in instructive work in the college should be required to present some sort of credentials which would show that he can deliver a public lecture properly. It is unfair to expect that a person can get up before a congregation of students and impart to them his knowledge just because he happens to know something. It is more than unfair to expect those students to listen attentively or learn anything. Yet at the present time and for some time past this has been the state of affairs in several departments. Professors and instructors no more

able to hold their own than a five-year-old have tried to deliver lectures before the students of this and other colleges and the result has been that the whole undergraduate body is pointing a finger of scorn at those unqualified professors and instructors.

The New York State College is not alone in this predicament. Students and graduates from other colleges will tell you that the same lack of public speaking ability exists among the instructing staff of their alma mater. Right here is a chance for our alma mater to step into the lead, as it has done in so many other things, and set a new precedent which will provide for some requirement in speaking ability from the instructing staff. What the students of this college want are professors with a personality and a delivery which is pleasing and from whom it is possible to understand a lecture without racking one's brain. Let's have "Safety First" here as elsewhere.

The Ag. Honor System

The College of Agriculture ranks among the foremost of the colleges of Cornell University in that it has adopted and used the honor system. Those students who had the courage to start such an institution surely deserve credit and praise for their high ambitions. Theoretically the honor system would work fine and actually it has worked with a certain degree of success. Furthermore it is unquestionably an ideal system, it encourages honor and discourages cheating. Herein we find the missing link which if found would make the honor system unquestionably perfect.

The trouble is that at the present time the honor system discourages cheating, but it does not do away with it. Last spring in many of the examinations there was so much cheating that one might easily have imagined that dishonesty was encouraged rather than discouraged.

It is high time for the honor system committee to get awake and see that further violations of the rules do not occur on such a wholesale scale as has been the case in some of the examinations of last year. If this committee find it beyond their power to enforce the rules then it is time that the Student's Association of the college adopt a modified honor system. Under such a system the students would still be on their honor, but the faculty would supervise and attend the examinations. This would eliminate cheating on a wholesale scale at least. Of course if everyone's honor was unquestionable such recourse would be uncalled for, but past experience shows that honor with some persons is often a state of mind which they may or may not be in at the time of the examination. However, it is not the intention of this article to go into the moral side of the honor system, it is merely intended to call attention to the fact that something should be done in order that it may be more of a credit to the college.

Plans

Following the announcement made in the June issue of the COUNTRYMAN this issue contains an account of agriculture at the Panama-Pacific Exposition. The travels of the COUNTRYMAN beyond this point have been taken up by Dean Galloway and will be continued by him throughout the coming collegiate year. Dr. Galloway some years ago took an extended tour through the regions which he describes in his articles and got intimately in touch with the farming conditions. This series has considerable educational value because it shows how the other half of the world "farms it."

The COUNTRYMAN is continuing the series of articles started a year ago entitled "An Agricultural Survey of New York State." When the series is completed, which will be within the next few issues, every phase of agriculture of this Empire State will have been covered in a general way. Should demand warrant, it is likely that the series will be reprinted and bound in a volume.

The plans also include several special numbers which no one can afford to miss. The December issue is to be an Annual Husbandry Number; the February, Horticulture; the March, Poultry and May, Farm Management.

**The Cornell
Countryman
Building**

In the course of the past year the COUNTRYMAN offices have been moved to the building formerly occupied by the Department of Rural Education. These new quarters give the COUNTRYMAN an abundance of room and it is the intention of the board that the rest of the student body shall share the building with the COUNTRYMAN.

All students of the College of Agriculture are urged to make use of the building whenever they desire. Furthermore the building is free at all times for committee meetings or for any club meetings. Make the COUNTRYMAN Building your building.





Campus Notes

Dr. C. E. Betten Assumes Duties as Registrar of the College

Dr. C. E. Betten, who was recently appointed registrar of the College of Agriculture in place of Professor A. R. Mann, '04, assumed his duties last June. Before coming to Cornell in his present capacity Dr. Betten was professor of biology at the Lake Forest University, Ill. There he received his bachelor's degree in 1910 and his master's degree the following year. He spent the next two years as instructor in biology at Buena Vista and from 1904 to 1905 was a fellow at Cornell and in 1906 received his doctor's degree. Dr. Betten has played an important part in administrative work wherever he has gone. Before coming to Ithaca this spring he was registrar at the Lake Forest University and was also active in committee work at that place.

Students to Get Actual Training in Rural Education

In order that they may get actual experience in teaching agriculture five members of the 1916 class will leave the University for the present term to act as assistants to teachers of agriculture in the high schools of this state. This

will give them valuable experience and they will be given enough compensation to pay for their expenses. In addition they will receive three credit hours for the work. Those seniors who will leave and the schools to which they will go are as follows: H. M. Mapes to Spencerport; G. G. Row to Worcester; B. C. Whittemore to Perry; L. H. Woodward to Leroy and F. G. Behrens to Alden.

Green House Range to be Completed by October 1

Work during the summer has progressed rapidly on the construction of new greenhouses east of Roberts' Hall and the proposed greenhouse range which has been talked of for many years will soon be a reality. The completion was affected under the \$30,000 appropriation made in 1912 and with the exception of one house for the department of vegetable gardening all the construction work has been done by the King Construction Co., of North Tonawanda. The additions give the department of floriculture 6,000 sq. ft. additional room, the soils department 600 sq. ft. additional room, and the departments of plant breeding, vege-

table gardening, plant pathology and botany each 2,500 sq. ft. additional room. Also an extension has been added to the head house which will provide an additional 1,200 sq. ft. for the plant pathology department.

Another Contract Let for the Ag. Heating System

A new contract has just been awarded by the college authorities for a continuation of the steam supply pipes from Roberts' Hall. Last spring the main supply pipe was laid from the plant to Robert's Hall and the new contract provides for branch pipes which will connect up all the buildings on quadrangle of which Roberts' Hall forms a part. After this has been done the fires in the old boilers will be put out and the buildings will be heated by the boilers in the new plant. The old boilers will not be removed, but will be kept in readiness in case the supply of the new boilers is inadequate.

Three Professors on Sabbatic Leave

For the coming year in the Ag. College three professors will be absent on a sabbatic leave. They are Professors Rice, Stocking and Mann.

C. E. Ladd Leaves for Delhi

C. E. Ladd, who has for the past year been instructor in the Farm Management Department, has left Cornell and is now director of the New York State School of Agriculture at Delhi. So

far no one has been appointed as his successor.

Enrollment in the College This Summer

The increase in the number of students in the Summer School and the third term this year has apparently kept pace with the increase in the number of students enrolled during the regular term. Summer School enrollment this year was 445 as compared to 388 last year while for the third term the enrollment was 108 as compared to 67 last year.

Miscellaneous Notes

Improvements to the campus of the College of Agriculture this summer have consisted of leveling and grading off many of the uneven places and sowing the same to sod.

During the six weeks of Summer School 27051 meals were served in the Home Economics Cafeteria. At the close of Summer School the cafeteria was closed down and in the meantime has undergone repairs and changes most important of which is the transfer of the dish room to the southeast corner of the dining room and the redecorating of the interior.

Miss Van Rensselaer of the Home Economics Department has been appointed president of the National Home Economics Association. Both she and Miss Rose have just completed an extensive tour through the Middle West during which they have attended many meetings of the association.

Football Games

The Athletic Association announces the following games for the coming football season: Sept. 28, Gettysburg; Oct. 2, Oberlin; Oct. 9, Williams; Oct. 16, Bucknell; Oct. 23, Harvard at Cambridge; Oct. 30, Virginia Polyten Polytechnic inst.; Nov. 6, Michigan at Ann Arbor; Nov. 13, Washington and Lee; Nov. 25, Pennsylvania at Philadelphia.

Former Student Notes



'00, B. S.—Otto F. Hunziker is now head of the Dairy Department of Purdue University at Lafayette, Ind. After receiving his bachelor's degree he spent another year at Cornell and in 1901 received his master's degree. During his collegiate days, Professor Hunziker won the Osborne Prize in essay writing, he was elected to Sigma Xi and from 1901 to 1902, was assistant in Pathological and Dairy Bacteriology at Cornell. The next three years he was milk

expert for the Scranton Condensed Milk Co., at Ellicottville and since 1905 has held his present position.

Today Professor Hunziker is among the leaders of the dairy industry of this country. Some of his more important research works are as follows:

Standardization of the glassware for the Babcock Test so that in place of some 35 test bottles representing different styles and capacities, three bottles are now recognized in this country as the standard Babcock glassware.

Introduction of the use of Glymol and the water bath in the reading of the cream test. This has been of great value in increasing the accuracy of the test.

The modification of the Babcock Test of evaporated milk. Prior to this modification it was impossible to secure reliable factory tests of this product.

The experimental demonstration that the original standard of solids in evaporated milk was too high and could not be complied with in many localities and at certain seasons of the year.

The invention of a quick method for factory use to determine the

per cent. of solids of evaporated milk by means of formula and tables.

A study of the cost of producing milk by Indiana dairy herds showing conclusively that the largest producing cows are the most profitable and demonstrating the importance of keeping yearly records.

Pasteurization experiments demonstrating the best method of pasteurization to be used at different seasons of the year in order to secure maximum germ killing efficiency, minimum deterioration of butter fat and keeping quality of the butter.

In addition he has made an exhaustive study of the effect of breed and the season of the year on the chemical composition of butter fat and the relative size of the fat globules and of the relation of the chemical and physical properties of butter fat to the mechanical firmness of butter.

'04, B. S.—For four years after graduation G. N. Allen managed the Reymann Estate at Wheeling, West Virginia. He then became interested in tractors and is now in the employ of the Chase Motor Truck Co., of Syracuse.

'06, B. S.—Word has been received that Lowell Gable has been awarded first prize on market milk at the Panama-Pacific Exposition. In addition his exhibit of milk won highest honors in having the lowest bacteria count. Since graduation Mr. Gable has been managing his father's large estate

near Wyebrook, Chester County, Pa. He has devoted much of his time specializing in horses and registered Guernseys. In addition he has the most modern equipment possible to place on a dairy farm.

'11, B. S.—Anna Jenkins is now located in Washington, D. C., doing mycological work in the Bureau of Plant Industry.

'11, B. S.—Elizabeth Genung has accepted a position in Simmons College as instructor in bacteriology.

'12, B. S.—Clara Browning is the Director of Household Arts in the Buffalo Technical High School. She is also in charge of the students lunch room in the building.

'12, B. S.—C. O. Dalrymple has gone to Colebrook, N. H., where he will be principal of the Colebrook Academy and teacher of agriculture.

'13, B. S.—A. B. Genung has gone to Stanford as teacher of agriculture.

'13, B. S.—C. W. Bame, who has been teaching agriculture at De-Ruyter, has resigned his position there and will go to Goveneur, where he will have a similar position.

'14, B. S.; '15, M. S.—M. V. Barnes has gone to Bethlehem, N. H., to teach agriculture.

(Continued on page 48.)

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THE STUDENT LOAN FUND OF THE COLLEGE OF AGRICULTURE

By H. E. Schradieck, '16.

The active organization of the Student Loan Fund Committee was undertaken by W. de S. Wilson, '13, in March, 1913. Prior to this there had been considerable agitation for a loan fund which would satisfy the particular needs of the College of Agriculture but no active steps were ever taken by the students.

A fund of \$298.01 was presented to the College by the Briarcliff School in 1908 to help the needy students. This sum had been in the treasurer's hands at interest. It was the real beginning of the loan fund, but not large enough to be of any extensive service and no steps were taken to make it more serviceable until Prof. A. R. Mann suggested to the Agricultural Association the plan of enlarging this fund.

Prof. Mann saw the need of helping worthy "working students." His broad sympathy for their cause urged him to find ways and means to that end. After considerable discussion and many conferences it was decided to leave the raising of money for this purpose to the students and the management of the fund to a faculty committee. The Agricultural Association then took hold and elected a committee of twelve consisting of three members of each class, with Mr. Wilson as chairman. It was decided to raise five hundred dollars in May that year and a very

active campaign was carried on which resulted in realizing \$450.00. This sum does not include a subscription from Frigga Fylga which was received later and sundry small contributions which were received the following month. In November over \$500.00 was turned over to the University treasurer.

The committee of twelve was found too large, consequently only five members were active in the fall of 1913. No regular campaign was carried on. The members of the committee working quietly throughout the year, realized about \$200.00, which raised the total to \$975.00.

In the fall of 1914 five members were again elected. It was decided that the faculty committee on scholarships and two students, the chairman and secretary of the committee should manage the loan. It was also decided to lend both principal and interest. The latter could be lent without and the former only on security. No interest was to be charged until the student ceased to be an enrolled undergraduate in the college.

The war with its financial consequences and the Belgium aid collections forced the committee to postpone the campaign for more funds. In the spring of 1915, subcommittees from the under classes were appointed, but it was found impossible to raise more than

(Continued on page 48.)

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The Student Loan Fund of the College of Agriculture

(Continued from page 46.)

twenty dollars, leaving the fund at just about one thousand dollars.

During the year appeals for help totaling two thousand dollars came in. Loans of seven hundred dollars were made.

The present senior class is the only one in college that has actively contributed to this very worthy enterprise. Students of the other three classes should not wait until personally solicited, but are urged to give or mail their contributions to members of the committee, whose names will be posted on the bulletin board, or hand them to the secretary of the college.

Former Student Notes

(Continued from page 44.)

'15, B. S.—Grace Fordyce was recently married to D. S. Fox, who is at present an instructor in the Department of Farm Management.

'15, B. S.—F. W. King has gone to Lowville as teacher of agriculture.

'15, B. S.—J. N. Hurley has gone to Malone as teacher of agriculture.

'15, B. S.—S. S. Greene has gone to Savanah as teacher of agriculture.

'15, B. S.—Norma LaBarre was married to Edwin Stevens, '12, on July 3. Stevens is a geologist at Davenport, Iowa.

(Continued on page 68.)



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The Soils and Agricultural Development of the Hudson Valley

(Continued from page 27.)

predominately from the crystalline rocks that make up the Gloucester series the Merrimack series is formed. All these soils were laid down during the retreat of the glacial ice when great volumes of water flowed southward through the irregularly filled valleys. They form a succession of terraces and remnants of beaches of gravel, sand, loam and sometimes finer materials. In all the series the gravel and sand deposits are inclined to be coarse and drouthy and, therefore, make poor agricultural land. The sandy loams and loams are all good soils and are the prevailing types. Silt and clay loam have small development. The prevailing colors are some shade or brown, yellow or dark gray, the former prevailing especially in the topsoil. The Fox—the calcareous soils—are naturally the best and are the least developed. So far as they are known in the state there is small choice between corresponding developments of the other two series. The Hoosic series is by far the most extensive and contains large areas of rather light gravelly loam. It is closely associated with the Dutchess series, while the micaceous and siliceous soils of the Merrimack series are associated with the Gloucester series in the southern part of the region.

Excellent farms are located in many of the valleys on these terrace soils. Due to topography and market situation, there is a wide

diversity in value of the lands, and careful judgment must be exercised in selecting a farm.

All the soils respond to applications of lime. They often need organic matter and drainage is often a requisite for good work. Some peculiarities are reported. For example, beans and potatoes are said not to succeed on the Hoosic soils through the middle of the valley. The soundness of these statements needs to be verified. Dairying based on hay and forage is extensively developed, and some of the fruit and trucking land is of this series. In the main they bear the better farms of the region but it must be remembered that farms usually extend across the valleys and take in bottom and hill land as well as terrace soils.

Other types of rather poorer gravelly and sandy soils of limited extent need not be described here.

First bottom lands—The first bottoms along the streams formed by recent overflow, are generally dark grays to brown sediments of a prevailingly silty character, but ranging from fine sand to sticky clay. They may be called the Ondawa soils in distinction from the bottoms of the western part of the state called the Genesee series. They are often subject to overflow and are generally more or less wet depending on the local situation. When drained these bottoms make excellent grain-forage and trucking lands. They are found along nearly every stream, the extent

(Continued on page 52.)

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H. O. Bonnar, '16

C. D. Smith, '17

The Soils and Agricultural Development of the Hudson Valley

(Continued from page 50.)

depending on the size of the stream and especially on the grade of its bed. The flatter streams have the broader bottoms. In some cases, as along the lower course of the Esopus and along the Hoosic river, they may be a half-mile or more in width. The danger from overflow makes them uncertain for any but summer crops. There are other alluvial soils of very limited area and these of small agricultural importance.

Truck and swamp land—Numerous depressions were left as a result of glacial action on the irregular rock surface of this region. In some, lakes were found. Some of these lakes have cut down the outlet or have filled with organic accumulations to the condition of swamp. Many small and some large areas of such swamp soils have been formed in the Hudson valley region, and when drained and developed make excellent agricultural land. They are found in all parts but the most notable areas are in central Orange county on the course of the Wallkill river. Most of these swamps have a deposit of muck or peat soil, the former prevailing. "Black dirt" it is usually called in the trucking region. Many of these areas adjacent to market facilities are being used for the productions of vegetables—onions, celery and some lettuce and cabbage. The practices are as yet not very intensive.

Rough land—In addition to the land definitely classed in soil series, there are many and often large areas of country where rock ledges predominate, or where the soil is so steep and stony that tillage is impossible, and its only value is pasture and a little timber. Such soil is termed rough stony land and rock outcrop. It ought never to have been cleared.

Distribution of soil conditions—Some idea of the relative proportion of these several series of soil may be gained from the following tabulation based on the soil survey of three counties in the region—Washington, Dutchess and Orange—which have an aggregate area of about 2200 square miles.

To the non-agricultural land should be added at least a third of the Dutchess area that is thin and stony, and the same proportion of the terrace soils that are too open sand or gravel to be of much value for anything but pasture and timber, making, on this basis of calculation, about 40 per cent. of essentially waste land so far as tillage is concerned. According to the last United States census there was 52 per cent. of improved land in farms in these same three counties, a decrease of 8 per cent. from the preceding census of 1900.

Agricultural development—If there is any one prevailing industry in the region, it is dairying in some of its forms which is practiced in all the agricultural parts. Much concentrated feed is purchased to back up the coarser hay

(Continued on page 56.)

SPRAYING

**Insures Perfect
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you can drive. Power
always strong. **Auto-
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liquid and **cleaning**
of strainers. Two noz-
zles to each row for
thoroughly saturating
foliage both top and
bottom.



Fig. 1500



**Fig.
180**

The Empire King

leads everything of its kind. Throws fine,
misty spray with strong force. **No clog-
ging.** Strainers are
**brushed and kept
clean** and liquid is **thor-
oughly agitated** auto-
matically. Corrosion is im-
possible.

Can be easily moved about.
Adapted for spraying fruit and
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Can be furnished on different size casks and
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platforms, spraying appli-
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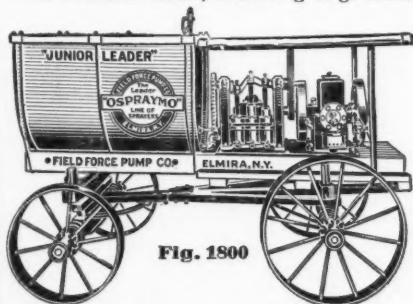


Fig. 1800

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**We are a supply
house
for Students**

Where you saw it will help you, them and us

The Soils and Agricultural Development of the Hudson Valley

(Continued from page 52.)

RESULTS OF A SOIL SURVEY

Non-agricultural	Rough stony land and rock outcrop	18.0%
Glacial soils	Gloucester series	3.0%
	Dutchess series	43.5%
	Dover and Cossayuna series	9.0%
Lake soils	Hudson series	8.7%
Terrace soils	Merrimack series	3.6%
	Hoosic series	5.0%
First bottom and swamp	Ondawa series	3.0%
	Muck and swamp	6.0%
Total		99.8%

and forage produced. Apples, peaches, pears and limited areas of small fruits are grown, particularly in the middle section adjacent to the Hudson river between Newburg and Albany. The Dutchess silt loam and the terrace intermediate soils texture chiefly of the Hoosic series are used for these crops. Climatic conditions are an important factor in success. Potatoes, formerly an important crop, especially in the northern part, are now little grown. Vegetables are grown on the reclaimed muck and swamp soils and their production centers on the large areas of such soil in the neighborhood and Goshen in central Orange county. There are undeveloped areas of such soil that await market conditions.

Poultry is receiving increased attention especially in the lower part tributary to New York and where the summer boarder industry is prominent.

Trend of agricultural practices—There is an increasing tendency towards specialized farming. A good illustration of this is the de-

velopment of the growing of violets around Rhinebeck where a large part of those supplied to New York are produced. Poultry represents another developing specialty. As the pressure of conditions increase, it is likely that special types of farm industries will be developed to adapt themselves to the cut-up and diverse soil, climate and market conditions.

Land values vary extremely—from near zero to several hundred dollars per acre. The latter figures are largely determined by proximity to New York and by summer residence values.

Lines of soil improvement—As a whole the soils are not of high fertility and they need careful handling to get results. All the fundamental factors of soil improvement—drainage, lime and organic matter and good tillage need to be applied to increase productivity. To these the soils respond generously. The small and irregular areas of most farms make the use of large machinery diffi-

(Continued on page 58.)

HOTEL IMPERIAL

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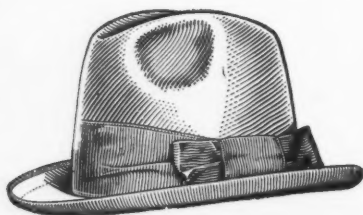
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New Shades

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JOHN B. STETSON'S \$4.00

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Sole agents for STETSON Shoes.



BUTTRICK & FRAWLEY

Where you saw it will help you, them and us

The Soils and Agricultural Development of the Hudson Valley

(Continued from page 56.)

cult, and this fact will contribute to the increase of special types of farming. The region is worth careful study for the person desiring to get near markets for he can often secure these and get good land and a pleasant home situation at a reasonable cost. Patience is usually required to secure a good combination of all these factors.

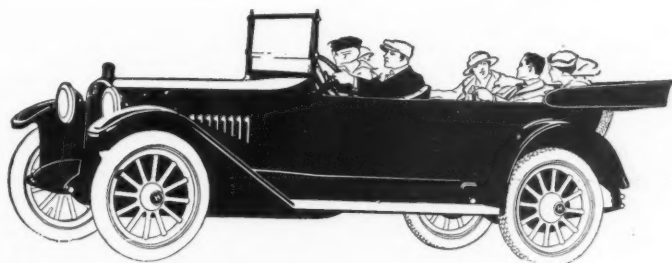
The Summer Travelling Practice Course

(Continued from page 32.)

course—at the end of the Sophomore or Junior year? The original idea in establishing these courses was to furnish the city-bred student a means by which he might be able to judge for himself whether he wished to major in Citriculture, Agronomy, or Animal Husbandry as the case might be. As a matter of practice, however, it works out with certain exceptions that the student is bound to continue in the division in which he selects the practice course inasmuch as very few divisions will accept other than their own practice courses.

Another argument in favor of the summer preceding the Junior year is that the students will be better able to understand the lectures during the last two years having the summer course as a background. This is true, but on the other hand the men are not at all prepared to understand and digest what they see on the summer course when they have had no lectures on the subject. There

(Continued on page 60.)



The J. B. Lang Engine and Garage Co.

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—Steam Vulcanizing—

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Chr. Hansen's Laboratory, Inc.
Little Falls, N. Y.

Western Office, 120 Jefferson St.
Milwaukee, Wis.

Where you saw it will help you, them and us

The Summer Traveling Practice Course
(Continued from page 58.)

is not time and but little opportunity on the traveling course to explain things in great detail. It is difficult to get the growers to understand that the men have had no instruction in the subject and they are sure to expect too much of them and to be surprised and unfavorably impressed by their questions. For these and other reasons I have come to agree with the students in their belief that it would be better if the summer practice courses were given at the end of the Junior year after having taken the general course in their major subject.

While the summer course as we have developed it, falls short of our desires as to actual practice work, we believe this is more than made up by the opportunity for meeting and getting acquainted with a large number of the most successful growers in all parts of the State. Such men are nearly always glad to meet the students and the hard-headed, practical, business advice given by them is of the very greatest value.

Oftentimes the grower will seize the opportunity to talk over some particular trouble of his to the exclusion of everything else. It requires a great deal of diplomacy on the part of the instructor in charge sometimes to so guide the grower and his conversation as to bring out the essential things in their relative importance and at the same time keep him in a good humor.

The Publications of our Service Bureau and other departments should be on the desks of all agricultural students. These publications are helpful and they are free. *Study the plant food problem from every angle.* Address

The American Agricultural Chemical Co.

Publicity Department, Boston, Mass.



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AT CORNELL UNIVERSITY**

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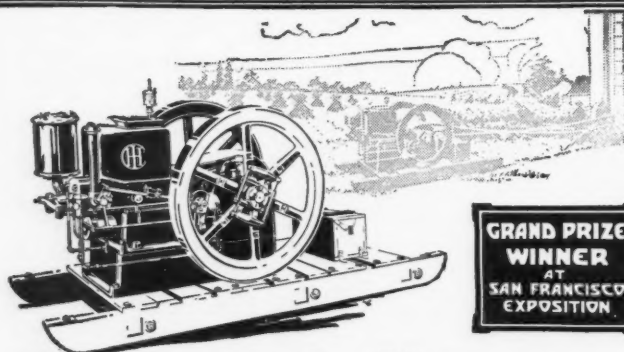
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sonable rates. 750 rooms, Bath.

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—is not a feed, but a medicated salt that rids all farm animals of blood-sucking, disease-breeding worms—makes stock thrive faster, look better, act better. Animals in healthy condition are much less liable to disease, than when "worm-ridden" and run-down. Try **Sal-Vet** at my risk—let me prove it's value on your stock.

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Tell me how many head of stock you have, and I'll ship you enough **Sal-Vet** to last them 60 days. You simply pay the freight charges when it arrives and feed it according to directions. If it does not do as I claim and you make a specific report in 60 days, I'll cancel the charge—you won't owe me a penny. Address

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No orders filled for less than 40 lbs. on this 60 day trial offer. Never sold by peddlers nor in bulk; only in Trade-Marked **SAL-VET** packages. Shipments for 60 days' trial are based on 1 lb. of **SAL-VET** for each sheep or hog, and 4 lbs. for each horse or head of cattle, as near as we can come without breaking regular sized packages.

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Get the maximum amount of work out of your horses and keep them in prime condition—head up, tail over the dash. Lower the cost of producing milk. Keeps cows in good flesh and therefore strong and healthy. Raise more beef, mutton and wool. Make Dewey's Stock Feed the foundation of your ration. Puts you in line for the greatest net profits. More energy or horse power, more beef and mutton, more milk.

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to your horses, cattle and sheep with hay and fodder; to your cows with Three D grains, cottonseed meal, gluten feed, oil meal or any other high protein concentrate, and hay, fodder or ensilage. If more net profit is what you're after, feed Dewey's Stock Feed.

Composition—Hominy Feed, Oil Meal, C S Meal, Middlings, Oat Feed $\frac{1}{2}\%$ Salt.

Made by THE DEWEY BROS. CO.**Box 579, Blanchester, Ohio****We also make Dewey's Ready Ration****Former Student Notes**

(Continued from page 48.)

'15, B. S.—Pearle Decker was married on July 21, to Erford L. Banner, '15, who is now an assistant in the Poultry Department and is working for his doctor's degree.

'15, B. S.—Eva Hollister was married during the early part of this summer to Earl Benjamin, '11, assistant professor in the poultry department.

'15, B. S.—R. B. Titis has gone to Westford, where he has accepted a position of principal of the high school and teacher of agriculture.

'15, B. S.—L. J. Steele has accepted a position as instructor in agriculture at Holey.

'15, B. S.—A. W. Wilson, former business manager of the COUNTRYMAN is now employed with the Orange Judd Publications and will devote his time to covering New York State and New Jersey.

'15, B. S.—W. S. Marsland is now managing a 300-acre fruit farm called Shore Acres Farm at Sodus.

'15, B. S.—Helen N. Esterbrook has gone to Gilbertsville as teacher of home making.

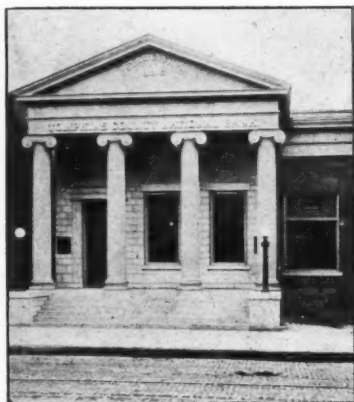
'15, B. S.—S. E. Stone is now teacher of agriculture at the Baron de Hirsh Agricultural School at Woodbine, N. J.

(Continued on page 70.)

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Fixing Shoes, Guaranteed Work

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Former Student Notes

(Continued from page 68.)

'15, B. S.—Adeline A. Thurston has gone to the New Paltz Normal School as teacher of nature study.

'15, B. S.—Mable Flummerfelt was married to F. Elton Rogers, '14, on Aug. 11. Rogers is now head of the farm bureau work of Connecticut and is located at New Haven.

'15, B. S.—T. G. Stitts is now teacher of agriculture at New Berlin.

'15, B. S.—W. R. Roth has gone to Machias as teacher of agriculture.

'15, B. S.—R. D. Merrill has gone to Morrisville, Vt., as teacher of agriculture.

'15, B. S.—W. R. Cone has gone to Edmeston, where he has accepted a position as principal of the high school and teacher of agriculture.

'15, B. S.—Ethel L. Phelps has gone to the Minnesota College of Agriculture, where she will instruct in Home Economics. Miss Olive M. Tuttle, '15, will also go to Minnesota as instructor in Home Economics.

'15, B. S.—Gertrude L. Bloodgett has gone to the University of Texas as instructor in Home Economics.

(Continued on page 75.)

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Stover Printing Co.

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"Right and On Time"

Work has won for us a very large list
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ARE YOU ONE OF THEM**?****BLATCHFORD'S CALF MEAL**

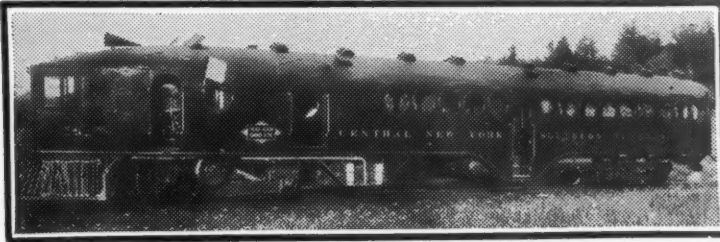
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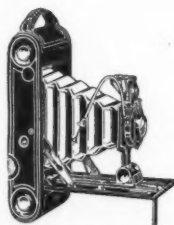
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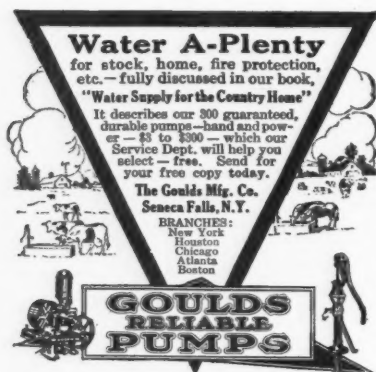
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(Continued from page 70.)

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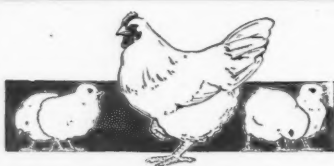
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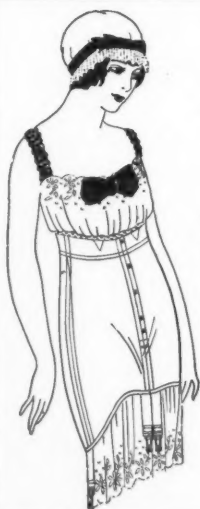
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